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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/569,206	04/04/2006	Chrystelle Langlais	21029-00309-US1	2033
30678 7590 04/27/2009 CONNOLLY BOVE LODGE & HUTZ LLP 1875 EYE STREET, N.W. SUITE 1100 WASHINGTON, DC 20006				
EXAMINER MENON, KRISHNAN S				
ART UNIT		PAPER NUMBER		
1797				
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04/27/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/569,206

**Applicant(s)**

LANGLAIS, CHRYSTELLE

**Examiner**

Krishnan S. Menon

**Art Unit**

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 March 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 9-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/02)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

Claims 9-17 are pending as amended 3/11/09.

**Claims 9-17 are rejected under 35 U.S.C. 103(a) as obvious over Collins et al (US 2003/0159990) OR Baba et al (US 6,461,511) OR JP 8215681, or a combination of two or more of them.**

Applicant's claimed invention is a method of preventing membrane fouling by adding biological floc at average dry matter of less than or equal to 2g/L in the water to be treated upstream of the membrane unit.

(1) Collins teaches (in the background information) about membrane bioreactors for processing biologically treated wastewater – see paragraphs 0005 – 0010. Collins does not teach the concentration of the floc in the water subjected to membrane filtration, but does suggest that the particle size of the floc must be larger than the membrane pore size.

(2) The Baba reference teaches a membrane separation process for wastewater treatment wherein the sludge load maintained is low, and provides guidelines for the membrane pore size – see column 2, lines 6-37 and column 3, lines 27-49. While there is no indication that Baba is using the biological floc to prevent membrane fouling, Baba's teaching of using the membrane for wastewater treatment which contains biological floc reads on the claims. The actual concentration of the floc in the water can

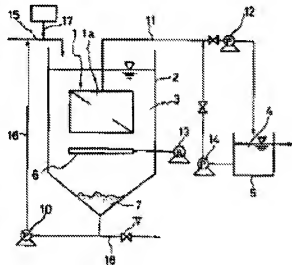
be optimized by the teaching of Baba, based on maintaining the sludge self-oxidation rate.

(3) **JP abstract** teaches injecting activated sludge in water upstream in a membrane separation process, as claimed by the applicant. See the abstract copied below.

**Abstract of JP8215681**

**PURPOSE:** To keep high transmission flux by preventing a membrane from becoming a clogged state by the penetration of fine particulate suspended matter smaller than the pores of the membrane into a membrane layer in a membrane filter apparatus.

**CONSTITUTION:** In a membrane filter apparatus allowing raw water 3 introduced into a filter tank 2 to transmit to perform solid-liquid separation by a membrane module 1, a sludge injection type membrane filter apparatus mixing sludge 7 adsorbing suspended matter in raw water 3 and growing the same to a size equal to or larger than the size of the pores of a filter membrane with the raw water 3 is constituted. Concretely, a sludge circulating pump 10 circulating sludge 7 to supply the same is installed to the raw water supply system to the filter tank 2 and an air jet pipe 6 whirling up the sludge 7 sedimented on the bottom part of the filter tank 2 to mix the same with the raw water 3 is laid within the sludge 7. In this case, the membrane module may be an immersion type filter membrane or a casing housing type filter membrane.



Contrary to applicant's argument that the JP reference uses mineral or organic coagulants, at least the abstract does not appear to teach that, but simply recirculating whatever is in the tank, which is believed to be bio-floc. Particularly, it teaches only "sludge injection", and not injection of coagulants or flocculants. Page 2 of the English (machine) translation of this reference teaches that the sludge 7 is "an aggregate of the

suspended matter separated by the hollow fiber 1a", which means it is what is naturally in the water and not externally added. Thus the reference teaches that the natural sludge itself can be used as the coagulant. In addition, the idea is to coagulate or make the particles grow in size to a size larger than the membrane pore, and once that idea is made clear, the coagulant used does not become inventive, unless applicant can show secondary evidence of patentability.

Thus Baba teaches using membranes to filter out bio-organic materials from wastewater, and both JP and Collins teach the need for the particle size to be larger than the membrane pore size. The specific flocculant used is not inventive unless applicant can show secondary evidence for patentability.

Having a batch or a continuous process is also not inventive.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S. Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Kim can be reached on 571-272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Krishnan S Menon/  
Primary Examiner, Art Unit 1797